



California Regional Water Quality Control Board

Central Valley Region



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MEMORANDUM

TO: Margie Lopez-Read

FROM: Julie Langill
Taro Murano

DATE: 6 September 2005

SUBJECT: SACRAMENTO VALLEY WATER QUALITY COALITION ANNUAL MONITORING REPORT, REVIEW SUMMARY

The Central Valley Regional Water Quality Control Board (Water Board) received the Sacramento Valley Water Quality Coalition (Coalition) Monitoring and Reporting Program Plan Annual Report 2004-2005 on 1 April 2005, as required by the Irrigated Lands Conditional Waiver Monitoring and Reporting Program Order No. R5-2003-0826 (MRP).

Water Board staff has reviewed the Annual Report and evaluated the document for completion of reporting requirements that are part of Order No. R5-2003-0826. The review has been divided into three major categories: 1) a discussion of administrative aspects, 2) a discussion of analytical aspects, and 3) a discussion of waiver compliance.

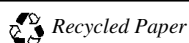
Administrative Aspects:

The Administrative review includes considerations of documentation timeliness, receipt under appropriate transmittal letter and inclusion of the major components as required by the MRP. This evaluation included a review to understand the completeness of the Coalition monitored locations and monitoring constituents required by the MRP. Submittals of appropriate communication reports occurred when measured values exceeded water quality objectives were also considered. Below are Water Board staff comments with respect to administrative aspects of the Annual Report review.

Item 1. The Coalition Annual Report was submitted on time, although a transmittal letter did not accompany it. The MRP requires that Coalition Groups submit the Annual Report with a signed transmittal letter, as follows:

'A transmittal letter shall accompany each report. This letter shall include a discussion of any violations of the Waiver found during the reporting period, and actions taken or planned for correcting noted violations, such as operational, field or facility modifications. If the coalition Group has previously submitted a Communication Report describing actions and/or a time schedule for

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implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall be signed and contain a penalty of perjury statement by the Coalition Group, or the coalition Group's authorized agent.” (specific penalty of perjury statement follows in the MRP)

The Coalition will need to submit a transmittal letter with a penalty of perjury statement for their first Annual Report. This type of letter must accompany all subsequent Annual Reports as well.

Item 2. Page 14 of the MRP identifies the key components that are required in an Annual Report. These components are summarized in Table 1. These items were submitted by the Coalition, although some deficiencies were noted. These deficiencies and other notes are described in the ‘Comments’ column, below.

Table 1: Annual Report Required Components

REQUIRED COMPONENTS	Annual Report PAGE NO.	COMMENTS
1. Title Page	i	Received
2. Table of Contents	ii	Received
3. Description of Watershed	1	Received
4. Monitoring Objectives	3	Received
5. Sampling Site Descriptions	5-12	Sample site descriptions were complete for the 14 Compliance monitoring sites identified by the Coalition and that were included in the Water Boards conditional approval. However, other monitoring sites, are inadequately identified. See Item 7 below.
6. Location Map of Sampling Sites and Land Use	7; Appendix G	One map was provided in the Annual Report, although it provided little value for site identification or for land use. Numbers were located on the map, but there was no legend to identify the significance of those numbers. It is presumed that the numbers relate to ‘detail’ maps in Appendix G, but that numeric designation is not identified. Detail maps did not provide any information with respect to land use, as required by the MRP.
7. Tabulated Results of Analyses	Appendix D	Tabulated data is provided in Appendix D of the Annual Report, but it is incomplete for supplemental sites. See Item 6 below.
8. Sampling and Analytical Methods Used	13-17	Certain aspects of required analytical procedures were not performed. These include flow measurements, the procedure for determining environmental persistence (duration) of toxicity triggers, for conducting a TIE and/or re-sampling and also for conducting all required 303(d) analyses. See Items 4, 5, and 8 below.
9. Copies of Chain of Custody	20; Appendix B; Appendix G	Chains of Custody are missing for some of the sampling events that took place at Compliance sites. At a minimum, COC's were missing for the following sites: : <ul style="list-style-type: none"> - McGaugh Slough at Finely Rd East (001-MGSLU-039); - Rough and Ready Pumping Plant Rd 108 (001-RARPP-069); - Coon Creek at Striplin Rd (001-CCSTR-76).
10. Associated Laboratory and Field	20-24	

REQUIRED COMPONENTS	Annual Report PAGE NO.	COMMENTS
Quality Control Samples Results		See Item 9 below.
11. Summary of Precision and Accuracy	22	Review of all available laboratory QC data that was provided (matrix spike, matrix spike duplicates and surrogate recoveries) indicates that precision and accuracy criteria were not always met. Some critical QC data was also missing. See Item 9 below.
12. Pesticide Use Information	25-29; Appendix F	Submitted, although more current data is preferred.
13. Data Interpretation Including Assessment of Data Quality Objectives	30-41	Submitted, although needs to be more thoroughly discussed. Where exceedances were observed, an approach to identify sources needs to be developed. Assumptions regarding exceedances, such as bacteriological, pH or DO results, as being the result of 'natural environmental conditions' is insufficient as an assessment of cause. Coalition methodology to identify environmental persistence (duration) of toxicity also needs to be corrected.
14. Summary of Management Practices (MPs) Used	42-44	Submitted, although insufficient information was provided to be able to interpret completeness or effectiveness of MP implementation.
15. Actions taken to address water quality impacts Identified, including but not limited to, revised or additional MPs to be implemented	45	A limited number of actions were listed.
16. Communication Report	Appendix E	See Item 2 below.
17. Conclusions and Recommendations	46-47	Submitted.
18. Field Documentation and Laboratory Data (Field Sheets; summary of conditions)	Appendix A; Appendix C	Laboratory Data Sheets were provided in AMR Appendix C. Field data sheets are provided in Appendix A, however, these data sheets are inconsistent within respect to format, content and use. Water Board staff can recommend an appropriate template for monitoring events to improve reporting format and consistency.

Item 3. Communication reports are a vital component of the MRP. The Coalition did submit three communication reports prior to 1 April 2005. However, the Coalition must improve the practice of timely reporting to the Water Board whenever instances of statistically significant toxicity occurs, and to begin submitting communication reports for all other monitoring parameters that exceed Basin Plan objectives, or Water Quality Goals. Appendix A provides a complete list of exceedances for which communication reports were not submitted. For current monitoring projects, exceedances and communication reporting needs to meet the criteria that is provided in the current MRP for Coalition Groups, Order No. R5-2005-0833.

Item 4. Flow measurements are required in order to meet the MRP Minimum Monitoring Requirements, as indicated on page 9 of the MRP, which states:

“Representative flow measurements shall be obtained at each sample location during each sampling event”.

Furthermore, a specific objective of the Monitoring and Reporting Program is to determine loads of waste discharged into surface waters, which is only possible when flow measurements are taken.

The Coalition did not report any flow measurements nor calculate waste loads, although there were multiple exceedances of water quality objectives. Flow measurement will continue to be an important analytical aspect within the MRP and this type of data are required to be reported in all subsequent Annual Monitoring Reports.

Item 5. To assess hydrophobic sediment bound wastes, the Coalition was to conduct sediment toxicity testing using the invertebrate species *Hyaella azteca* or *Chironomus tentans*. The Coalition did not submit any sediment toxicity test results in the first Annual Report.

Item 6. The submittal and format of all analytical data within an Annual Report needs to be complete, accurate and consistent for all sampling sites. The presentation of data within the Coalition Annual Report was not consistent, nor clearly presented for all monitoring sites. For example, laboratory reports with data for supplemental sites were found within Appendix C. However, this same data were not tabulated within the body of the report, and exceedances were not discussed in the text, nor were they discussed in a Transmittal Letter that should have accompanied the Annual Report. All data must be clearly tabulated, presented and the results must be compared to Basin Plan and Water Quality Objectives and discussed in the report in future monitoring reports. In the absence of a complete data table submitted by the Coalition, Water Board staff prepared tables for all sites.

Item 7. The Coalition seemed to use different names for the same sites, although correct identification of locations in some cases is still unclear. The fact that GPS coordinates were not provided for these sampling events and sites increases the site identification uncertainty. Table 2 provides a list of sites for some monitoring locations that seem to have multiple names – or that could in actuality be multiple sites. It is assumed by the Water Board staff that these alternative names represent the same location, although verification of this needs to be provided by the Coalition. The last five rows in this table list sites codes that do not have any identifying information at all in the Coalition’s MRP Plan. The value of the monitoring information from these sites is unclear, and clarification from the Coalition needs to occur. Failure to adequately identify site locations for monitoring data can make the results virtually unusable.

Table 2 – Site Identification

Site Name	Alternative Site Name(s) ?
Pit River @ Pitville Bridge	Pitville
Pit River @ Hat Creek Confluence	Hat Creek; Hat Creek @ Bridge
Pit River @ Fall River Ranch Bridge	Fall River #7 River Ranch Bridge
Tule Canal @ I-80	Tule Canal; 11 Tule Canal; Tule Canal Headwater
Ridge Cut	2 Ridge Cut
Toe Drain @ NE Corner of Little Holland Tract	Toe Drain; 12 Toe Drain
Cache Creek	3 Cache Creek
Willow Slough @ Rd 99	Willow Slough; 4 Willow Slough
Putah Creek @ Peddrick Rd	Putah Creek; 6 Putah Creek

Site Name	Alternative Site Name(s) ?
EL 9	None
LT 10	None
TR 11	None
TR 12	None
YBWA	None

The Coalition needs to develop a consistent approach to site identification and use it in all chains of custody, field notes and final reports.

Analytical Aspects:

The Analytical Review includes considerations of proper methodology for sampling and for laboratory analyses, comparison of the monitoring results to Basin Plan Objectives, adequacy of method quantitation limits, hold times, precision and accuracy and other QA/QC requirements. Water Board staff comments are as follows:

Item 8. The Coalition did not perform the required procedures for toxicity testing, including determination of magnitude, duration and toxicity identification evaluation. Several Coalition samples did exhibit toxicity, there were no dilution series conducted to determine the magnitude of the toxicity, nor were there any TIEs to identify the cause. The Coalition must begin immediately to follow the toxicity testing requirements and perform a TIE on the initial sample when toxicity as specified in the revised MRP for Coalition Groups. If 100% mortality occurs at any time during the testing period, a dilution series must be conducted, as specified in the existing MRP. Additionally, a TIE must be conducted on the original sample should toxicity of 50% or greater occur. Please refer to pages 4 and 5 of the MRP Order No. R5-2005-0833. Therefore, sufficient sample volume will need to be collected each time in order to accommodate both dilution series and TIEs should toxicity occur.

Item 9. The review of quality control aspects of the Annual Report involved analyzing QC results on a laboratory basis and by comparing Annual Report results with MRP and QAPP requirements. Table 3 below outlines some of the missing QC data and exceptions for QC limits.

Table 3 – Summary of Laboratory QC Comments

Laboratory	QC Comments
Basic Laboratory	Laboratory and Field QC missing for the following constituents: E. Coli, Fecal Coliform, Total Coliform, Nitrate, Total Phosphorus, Total Suspended Solids
BioVir	Laboratory and Field QC missing for the following constituents: E. Coli, Total Coliform, and Fecal Coliform
Monarch Labs	Laboratory and Field QC missing for Fecal Coliform
CalTest	% Accuracy: QAPP specifies 80%-120%; reported 75% and 128%.
CRG Marine Labs	Precision in some cases was equal to 25%, which met the limit for RPD under the Irrigated Lands Conditional Waiver. Accuracy: The QAPP specifies 80%-120% recovery; reported recoveries varied from 40% to 124% for surrogates and spikes.

The number of QC samples performed by the Coalition appear to be consistent with the 5% requirement of the MRP. However, QC data was not evaluated and commented on for supplemental sites by Water Board staff

because it was not provided. All monitoring data that is reported must include appropriate documentation, such as chains of custody, QC and tabulated results. When QC limits are not met, explanations need to be provided in communications with the Water Board. Failure to provide monitoring data that meets quality control requirements can call into question the usability of the data. Furthermore, there was not any precision or accuracy information provided in the Annual Report for supplemental monitoring sites, and the value of the data from these sites is negligible.

Item 10. When analytical results are reported as invalid due to failures in laboratory procedures, the Coalition needs to provide detailed documentation from the laboratory for these occurrences and conduct a re-analysis or resample. For example, the 3 May 2005 Burch Creek sampling event reportedly resulted from a water bath malfunction and failure by the laboratory to conduct a test according to Standard Operating Procedures. For this instance and for all others that are the result of laboratory procedure the Coalition is responsible for ensuring that a resample occur immediately, either by the laboratory or by the Coalition. Failure to do this is failure to comply with the MRP requirements.

Waiver Compliance Aspects:

Item 11. Based on toxicity results that have been submitted by the Coalition, the Water Board has identified three compliance monitoring sites as high priority and the Coalition should conduct repeat and upstream monitoring at these sites, or conduct other approaches to firmly identify the sources of toxicity. These sites are identified as Burch Creek at Woodson Bridge Ave, Pine Creek at Nord-Gianella Road, and Z Drain-Dixon RCD.

Item 12. Some of the Supplemental Monitoring Sites exhibited significant toxicity, as well as exceedances in other water quality parameters. These sites include those identified as Cache Creek, Ridge Cut, Putah Creek, Fall River, Pitt River, Coon Creek, Big Indian Creek, Indian Creek, Spanish Creek, YBWS and Willow Slough. The Water Board should now require that the Coalition continue to monitor at these locations, and to submit a revision to the MRP Plan that includes these sampling locations as routine compliance sites. A summary of the exceedances at Supplemental Sites was prepared by Water Board staff and is provided in Appendix B.

Item 13. It is essential that instructions for resampling or monitoring guidance that are made by Water Board staff with respect to program compliance be followed. During a phone conversation that took place on 16 May 2005, between Water Board staff and the Coalition, the Coalition was told to resample Burch Creek at Woodson Avenue Bridge. Water Board staff became aware that the Coalition did not collect a new samples despite the prior request.

Item 14. The MRP stipulates on page four that "Phase 1 monitoring shall include all 303(d) pollutants identified in downstream waterbody(s) and discharged to land or surface water within the watershed. Table 4 summarizes the Section 303(d) listed water bodies that are also Coalition Compliance Monitoring Sites for which 303(d) pollutants were not monitored.

Table 4 - Relevant 303(d) Listed Waterbodies

Water Body Name	Constituent(s) of Concern
Colusa Basin Drain	Group A Pesticides
	Molinate/Odram
	Unknown Toxicity
Feather River, Lower (Lake Oroville Dam to Confluence with Sacramento River)	Diazinon
	Group A Pesticides
	Unknown Toxicity
Pit River	Organic Enrichment/Low Dissolved Oxygen

The Coalition needs to monitor for the 303(d) listed contaminants at the appropriate monitoring sites, or provide documentation that they are not discharged to land or surface water in the watersheds from irrigated lands. It should be noted in particular, that the Coalition currently does not have any monitoring sites located in the Lower Feather River Sub-watershed. The Coalition did sample at two sites, Spanish Creek and Indian Creek, in the Upper Feather River Sub-watershed. However, toxicity and pesticide analyses were not performed at either of these sites.

APPENDIX A

APPENDIX B